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in Europe: policies, interventions and their impact



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Abbreviations

APCO Action Plan on Childhood Obesity

BMI Body Mass Index

COSI Childhood Obesity Surveillance Initiative

DG Directorate-General

EAC Directorate-General Education and Culture

FAO Food and Agriculture Organization

FRESH Focusing Resources on Effective School Health

HBSC Health Behaviour in School-aged Children

HEPCOM The Learning Platform for Preventing Childhood Obesity in Europe

HEPS Healthy Eating and Physical Activity in Schools in Europe

IHCP Institute for Health and Consumer Protection

IRC Joint Research Centre

NCD Non-Communicable Disease

NOPA WHO European Database on Nutrition, Obesity and Physical Activity

PHPS Public Health Policy Support

PISA Program for International Student Assessment

SABER Systems Approach for Better Education Results

SANCO Directorate-General Health and Consumers

SFS School Fruit Scheme

SHE Schools for Health in Europe

SMS School Milk Scheme

SNIPE School Nutrition Index of Programme Effectiveness
SPARE System of Planning and Evaluation of School Meals

UK United Kingdom

UNICEF United Nations Children's Fund

UNU United Nations University
WHO World Health Organization

Preface

The Joint Research Centre (JRC) is the European Commission's in-house science service. One of its activities is to provide public health policy support to the Directorate-General Health and Consumers (DG SAN-CO) and other policy DGs. On 15-16 May 2014, the JRC, in collaboration with the World Health Organization (WHO) Europe and Public Health Nutrition Research Ltd., organised the workshop 'School Food and Nutrition in Europe: policies, interventions and their impact' that brought together Member States representatives of the High Level Group on Nutrition and Physical Activity and other public health experts with an interest in school food and nutrition. The main aims of this workshop were to provide up-to-date findings on policy development and related evidence from across Europe and to discuss examples of best practices, knowledge gaps and ways forward. The following workshop report summarises the presentations, as well as the discussions that took place in dedicated brainstorming sessions. We hope that all stakeholders in the field of school food and related policy-making apply our findings to ensure improved implementation, monitoring and evaluation for optimal impact and robust evidence.

We would like to thank the participants for their valuable contribution during the plenary discussions and brainstorming sessions, and for their enthusiasm and motivation that made this workshop a success.

EXECUTIVE SUMMARY

Childhood overweight and obesity are on the rise in Europe. According to the WHO, 1 in 3 children aged 6-9 years were overweight (incl. obesity) in 2010; up from 1 in 4 children of the same age in 2008.1 Schools are considered a protected environment where children should learn healthy diet and lifestyle habits early on. To this end, Member States have developed policies to guide school food provision among other important aspects. On 15-16 May 2014, the JRC in collaboration with WHO Europe and Public Health Nutrition Research Ltd., hosted a workshop entitled 'School Food and Nutrition in Europe: policies, interventions and their impact' at its site in Ispra, Italy. Forty-six participants from national ministries, academia and non-governmental organisations reviewed and discussed the current state of European school food policy, assessed knowledge gaps and suggested promising ways forward.

The need for action

Issues of both over- and under-nutrition are currently observable in European children, yet overweight, including obesity is the major public health issue. Prevalence is particularly high in southern Europe, *e.g.* Italy, where 46% of children aged 8 were overweight or obese (data from 2007/8). Data

1. EU Action Plan on Childhood Obesity 2014-2020, http://ec.europa.eu/health/nutrition_physical_activity/docs/childhoodobesity_actionplan_2014_2020_en.pdf.

from 2009 show that throughout Europe energy intake in children (aged 4 to 9 years) was higher than the FAO/WHO/UNU recommended values. The same trend is seen for protein intake, again particularly in southern Europe. Fat intakes (as percentage of daily energy (%E)) as well as sugar intake (%E) are also worryingly high in this region. On the other hand, dietary fibre intake levels are far below the recommended level of 25 g/day in every European region (except for children in Germany and Portugal).

What's being done?

During the workshop, a number of actions by the European Commission, WHO, UNICEF, and the Schools for Health in Europe (SHE) network addressing the above concerns were presented. These include the EU School Fruit and Milk Schemes, the WHO Childhood Obesity Surveillance Initiative (COSI) and the Health Behaviour in Schoolaged Children (HBSC) survey, the UNICEF Facts for Life programme, and the pooling of information resources and tools for health promoting schools by the SHE network.

How are schools doing?

All EU28 countries (plus Norway and Switzerland) have school food policies in place, and policy details can be taken from a recently published JRC report.² Food- or nu-

^{2.} Mapping of National School Food Policies across the EU28 plus Norway and Switzerland, available at http://dx.doi.org/10.2788/8214.

trient-based standards for school food provision (including from vending machines) vary throughout the EU and address important points such as the availability of fresh water or fruits and vegetables, as well as restrictions on soft drinks, deep-fried and processed foods, salt, crisps and savoury snacks, and sweet treats.

Participants from England and Portugal shared their personal field experiences. First, Myles Bremner (School Food Plan) presented the new English School Food Plan, which was published in July 2013. The plan sets out 16 clear actions to improve children's health and educational attainment by driving change around food culture, and it recommends rolling out universal free school meals in primary schools.

Pedro Graça (Directorate-General of Health -DGS, Portugal) then discussed Portugal's observations on food insecurity (changes in eating patterns or food intake due to economic difficulties in accessing food) as well as inequalities and deficiencies in times of financial austerity within the school setting. Portugal has many inequalities and sees statistically significant differences in many energy balance-related behaviours (e.g. energy intake, physical activity, sedentary time) between low- and high-income families and children. As in several other countries, food insecurity also coexists with obesity in Portugal. Food insecurity among students from medium-income families is a new development.

Subsequently, Samrat Singh, from the Partnership for Child Development, assessed the policy environment for school food in different countries around the globe, discussing issues such as the effects of systems (de-)centralisation on school food but also how public consultation correlated positively with the quality of school food policies in these countries.

At European level, Jo Jewell (WHO Europe) discussed recent data on school environments throughout Europe. Jo observed a large variability in school nutrition environments across and within countries and he concluded that some countries appeared to have more supportive school nutrition environments than others. Lower school nutrition environment scores might relate to the absence or inadequate implementation of national policies.

What next?

The presentations were followed by stimulating discussions where the participants exchanged ideas on 'recipes for success' in the area of school food provision and how to move forward, including monitoring and surveillance. Concrete examples in terms of 'recipes for success' were: (1) the building of partnerships, (2) local engagement and co-creation (the co-involvement of head teachers was seen as crucial) and (3) increasing the availability of healthier options.

Regarding suggestions on how to move school nutrition forward, the participants highlighted various measures at many different levels from revisiting portion sizes to having benchmarking tools and comparable data. Monitoring and evaluation

of school food policies and their implementation and effects are seen as essential. Progress indicators discussed ranged from school food intake and uptake to educational attainment and absenteeism. Schools can be an effective setting to promote children's health and ensure a healthier generation of adults. Many additional measures can be considered in this regard, including nutrition education, school gardens, handwashing programmes, preparing and eating school food, teeth-brushing, and even using schools to act on health inequalities.

We hope this summary is informative and helps steer progressive discussions between all those directly or indirectly involved in school food policy-making.

Introduction

Background

Research shows that dietary intakes in school children can be improved by providing healthier food choices at school in an attractive and accessible way. In this context, the European Commission's JRC, in collaboration with DG SANCO and the EU High Level Group on Nutrition and Physical Activity, has produced a detailed map of different national school food policies.3

In follow-up to that report, the JRC, together with the World Health Organization Regional Office for Europe (WHO Europe) and Public Health Nutrition Research Ltd., organised the workshop 'School Food and Nutrition in Europe: policies, interventions and their impact'. The aim of the workshop was to provide a forum for policy-makers, academics and other experts in the field to discuss current strategies in school food policies and to address the means of best promoting child health-for example, via the development of effective school food policies, as well as more practical aspects of policy implementation, monitoring and evaluation.

The objectives of the workshop were to:

- provide up-to-date findings on policy development and related evidence from across Europe including:
 - state of the art
 - developments in school food policy and evaluation
 - monitoring and surveillance
- · discuss knowledge gaps and provide examples of best practices in small working groups (Workshop sessions) and during general presentations (Evidence sessions).

This report provides an overview of the presentations, discussions, suggestions and ideas that arose during the workshop. A list of participants and their short biographies can be found in Annex I, and the agenda of the workshop is detailed in Annex II. Statements in this report represent the opinions of the participants; they have not been checked for factual correctness and are not representative of the European Commission's views. Despite the brevity and conciseness of the proceedings of the workshop itself, the breadth of information and ideas contained within this report will be of value for all stakeholders involved, directly or indirectly, with children's health and education. The authors of this report are therefore extremely grateful to all participants for the enthusiasm and generosity with which they shared their knowledge and views on all the topics discussed, and their willingness to further share them with the public.

The workshop

The opening session of the workshop was conducted by the JRC Public Health Policy Support (PHPS) Unit Head, Ciarán Nicholl, who welcomed the participants from all across Europe. He gave a brief overview of the JRC's role as the European Commission's in-house science service that carries out research to provide independent scientific advice and support to EU policy. In the changing global socio-economic landscape, Europe is facing a major challenge in maintaining a high level of public health protection, especially for an ageing population. The PHPS Unit at the JRC's Institute for Health and Consumer Protection (IHCP) is starting to address some of the issues associated with such a challenge. In this context, Ciarán introduced the JRC nutrition team and its work in reviewing current scientific developments in nutrition and their applicability and relevance for decision-making in the area of public health.

João Breda (WHO Europe) outlined the scope of the workshop and highlighted the success of the previous international school food policy workshop held in London in January 2012, the outcomes of which are well-documented in a series of articles.4 João also called for more attention to be given to monitoring, surveillance and evaluation of interventions and policies and stressed that the evidence obtained through these means should support policy-makers in their decision-making.

Bent Egberg Mikkelsen (Aalborg University, Denmark) then addressed the complex food realities in schools and their wider environment. Aspects to be considered include: school fruit and vegetable and milk schemes, breakfast clubs, various types of lunch services (e.g. school kitchen, catering services, tuck shops, and vending machines), school gardens, cooking classes, and food outlets in the school neighbourhood. Consequently, a range of stakeholders needs to be considered when promoting health through food and eating.

^{4.} https://journals.cambridge.org/action/displayIssue?jid=PHN &volumeId=16&seriesId=0&issueId=06.

The need for action

In the first plenary talk, Margherita Caroli (Nutrition Unit at ASL Brindisi, Italy) reminded the audience that good nutrition is essential for child health and growth. In Europe, issues of both over- and under-nutrition are currently observable in childrenhowever, childhood overweight (including obesity) is the major public-health issue. The prevalence of both overweight and obesity throughout Europe is high, particularly in southern Europe; for example, 46% of 8-year old Italian children were overweight (incl. obesity) according to data from 2007/8. Data from 2009 show that throughout Europe, energy intake in children (4 to 9 years old) was higher than that recommended by FAO/WHO/UNU for this age group. The same trend is seen for protein intake, again in particular in southern Europe. Fat and sugar intakes (as per cent of daily energy) are also disturbingly high in this region. In contrast, intake of dietary fibre is far below the recommended level of 25 g/day in every European region except for Germany and Portugal.

Childhood obesity has many complications and often includes feelings of guilt and unhappiness. Moreover, an obese child is likely to carry a much higher risk of chronic illnesses such as cardiovascular disease into adulthood. Margherita stressed that it is essential to take care of children's health and made reference to the fact that access to health care is a fundamental right.5 For informed policy-making, more data is needed, including children's nutritional and health status (by age and sex), food intake, and quantity and quality of food consumed. She called for an end to using different methodologies between research groups, which currently makes it difficult to compare and to pool data for more robust results. In the subsequent Question & Answer session, it was pointed out that school food provision varied in the EU. The audience asked whether it was possible to check the relationship between the way food is provided and health outcomes? Margherita responded that school food provision was important but there was a wide array of other factors to be considered as well. One way would be to have a full European view of what is happening from kindergarten to high school. Therefore, an important aim of the workshop was to find the right tools for this task.

5. The EU Charter of Fundamental Rights (2000/C 364/01) states that 'children shall have the right to such protection and care as is necessary for their well-being' (p. 13). Furthermore, 'everyone has the right of access to preventive health care and the right to benefit from medical treatment under the conditions established by national laws and practices. A high level of human health protection shall be ensured in the definition and implementation of all Union policies and activities' (p. 16). http://www.europarl.europa. eu/charter/pdf/text_en.pdf.

What's being done?

Subsequent presentations showed how actions by the European Commission, WHO, UNICEF, and the Schools for Health in Europe (SHE) network are addressing the above concerns. *Table 1* lists some of the activities that these organisations presented to workshop participants. The presentations also highlighted that as the development of healthy-eating and physical-activity habits

occur during the early stages of life, the school setting is a promising target for intervention. At a time when national health systems are under great financial pressure and greater investment is warranted in prevention of ill health, only about 3% of current EU health expenditure is allocated to public health and prevention programmes.⁶

Table 1. Examples of representative initiatives in the area of child nutrition.

Please note that the table is not intended to provide an exhaustive list of actions by the bodies cited.

Who?	What?	For more information
European Commission	The Strategy for Europe on Nutrition, Overweight and Obesity related Health issues	EU Platform for Action on Diet, Physical Activity and Health (http://ec.europa.eu/health/nutrition_physical_activity/platform/index_en.htm) EU High Level Group on Nutrition and Physical Activity (http://ec.europa.eu/health/nutrition_physical_activity/high_level_group/index_en.htm)
	EU Action Plan on Childhood Obesity 2014-2020	http://ec.europa.eu/health/nutrition_physical_activity/docs/childhoodobesity_actionplan_2014_2020_en.pdf
	School Fruit Scheme (SFS), School Milk Scheme (SMS), and new proposal to combine these in one scheme (with a particular focus on accompanying educational measures)	SFS (http://ec.europa.eu/agriculture/sfs/index_en.htm) SMS (http://ec.europa.eu/agriculture/milk/school-milk- scheme/index_en.htm New proposal http://europa.eu/rapid/ press-release_IP-14-94_en.htm) http://ec.europa.eu/agriculture/cap-post-2013/implementa- tion/pdf/1450/c-2014-1450_en.pdf
	Pilot projects two projects aim to increase consumption of fresh fruit and vegetables in communities where household income < 50% of EU average one project aims to promote healthy diets among children, pregnant women and elderly	

^{6.} http://ec.europa.eu/health/strategy/docs/swd_investing_in_health.pdf.

Table 1. (cont.)

Who?	What?	For more information
	Funding and co-funding (incl. research and health programmes)	http://ec.europa.eu/health/programme/policy/index_en.htm http://ec.europa.eu/programmes/horizon2020/
World Health Organization	Comprehensive implementation plan on maternal, infant and young child nutrition 2012-2025	http://apps.who.int/gb/ebwha/pdf_files/EB130/B130_10-en.pdf
	Health Behaviour in School-aged Children (HBSC) survey	http://www.euro.who.int/en/health-topics/Life-stages/child-and-adolescent-health/adolescent-health/health-be-haviour-in-school-aged-children-hbsc2who-collaborative-cross-national-study-of-children-aged-1115
	Childhood Obesity Surveillance Initiative (COSI)	http://www.euro.who.int/en/health-topics/disease-prevention/nutrition/activities/monitoring-and-surveillance/whoeuropean-childhood-obesity-surveillance-initiative-cosi
	Vienna Declaration on Nutrition and Noncommunicable Diseases in the Context of Health 2020	http://www.euro.who.int/data/assets/pdf_file/0005/193253/CONSENSUS-Vienna-Declaration-5-July-2013.pdf
	Food and nutrition policy for schools: a tool for the development of school nutrition programmes in the WHO European Region	http://www.euro.who.int/data/assets/pdf_ file/oo19/152218/E89501.pdf?ua=1
UNICEF	Facts for Life	Facts for Life on healthy living and the prevention, control and management of NCDs in children and adolescents (pending publication)—http://www.factsforlifeglobal.org/
SHE Network	Schools for Health in Europe network	http://www.schools-for-health.eu/she-network
	Healthy Eating and Physical activity in Schools (HEPS)	http://www.schools-for-health.eu/she-network/resources/heps-schoolkit
	The learning platform for preventing childhood obesity in Europe (HEPCOM)	Supported by EU's health programme 2008-2013 http://hepcom.eu/

How are schools doing?

Turning to the school settings, Stefan Storcksdieck genannt Bonsmann of the JRC presented the recently published JRC report Mapping of National School Food Policies across the EU28 plus Norway and Switzerland.7 He indicated that all 30 countries have school food policies in place and described in detail the objectives and content of these policies. One of the points reported was the food- or nutrient-based standards used for school food provision (including food from vending machines). These standards vary throughout the EU and address important points such as the provision of fresh water or fruits and vegetables as well as restrictions on soft drinks, deep fried and processed food products, salt, crisps and savoury snacks and sweet treats. At the nutrient level, most policies emphasise age-appropriate quantities of fat and calories of school meals as well as foods and drinks available in the school in general.

Notably, the data and the report presented are an objective summary of food and nutrition standards or guidelines laid down in the most recent school food policy documents. Inferences as to their degree of implementation or their effectiveness in achieving the stated objectives (such as improving child nutrition, teaching healthy diet and lifestyle habits, or reducing or preventing obesity)

were beyond the scope of this assessment. However, the analysis provides a baseline of the legal frameworks for school food across Europe.

Given the interest from the workshop participants in accessing the data collected, the JRC will look into possible means of making such individual country data available. WHO Europe offered support for integration of the data into the Nutrition, Obesity and Physical Activity (NOPA) database.

Participants from England and Portugal shared their personal field experiences. First, Myles Bremner (*School Food Plan*) presented the new English School Food Plan, which was published in July 2013. The plan sets out 16 clear actions to improve children's health and educational attainment by driving change around food culture, and it recommends rolling out universal, free school meals in primary schools.

Amongst other things, the plan makes food education and cooking compulsory in the new curriculum. In addition, it offers seed funding from the National Department for Education to establish breakfast clubs and increase uptake of school meals, and it introduces new school food standards (to be developed by September 2014 and in place by early 2015). Myles noted that provision of a free meal to a child alone is nothing; the meal needs to be nutritious and appealing.

7. http://dx.doi.org/10.2788/8214.

Three core principles guide the School Food Plan: 1) The head teacher leads the change; 2) Food is part of a whole school approach; and 3) Seeing through the eyes of the child.

Pedro Graça (Directorate-General of Health -DGS, Portugal) then discussed Portugal's observations on food security as well as inequalities and deficiencies in times of financial austerity within the school setting. Nutrition interventions in Portuguese schools are primarily carried out in two areas: 1) education/curriculum and, 2) the actual provision of food. In 2010, 97% of schools had plans in place regarding nutrition education. Also, the schools have access to an online tool, SPARE, that allows them to make their own evaluations, manage menu planning and evaluate policy in the school.

Portugal has many inequalities and sees statistically significant differences in many energy balance-related behaviours (e.g. energy intake, physical activity, sedentary time) between low- and high-income families and children. The most severe levels of food insecurity (changes in eating patterns or food intake due to economic difficulties in accessing food) are estimated at over 17% of families observed in Primary Care Services in Portugal (InfoFamilia, DGS, 2014). However, this figure is based on self-perception of adequate access to food, and times of crisis and anxiety can exacerbate the feeling of incapacity to access food. As in several other countries, food insecurity also co-exists with obesity in Portugal. Food insecurity among students from medium-income families is a new development.

The financial crisis and the austerity measures imposed throughout the country have also meant that teachers and school staff are less cooperative (no time, less involved, many functions at school, less rewarded and more insecure in their jobs) and have less time to dedicate to nutrition education. At the same time, food services offered in schools are outsourced and companies have started to provide food and nutrition education materials as part of their Corporate Social Responsibility schemes. These developments make the school environment very difficult to remain or become the protected space in which children can learn healthy diet and lifestyle habits.

Pedro closed his talk by highlighting the following potential areas for intervention:

- · Local government participation (with improved capacity to evaluate food insecurity).
- · Creation of strong networks between local food producers and schools.
- · Improvement of nutritional quality of food assistance programmes.
- Integration of traditional diets as a sustainable and healthy diet pattern in school curriculum and canteens.
- Improvement of school staff workforce capacity to be involved in the solutions.

Samrat Singh, from the Partnership for Child Development, assessed the policy environment for school food in different countries around the globe, discussing issues such as the effects of systems (de-)centralisation on school food but also how public consultation correlated positively with the quality of school food policies in these countries.

At European level, Jo Jewell (WHO Europe) discussed recent data on school environments throughout Europe. WHO Europe has developed an index of 18 school environmental characteristics (indicators). The nutrition-related aspects included availability of fresh fruit and vegetables, drinking water, sugar-sweetened beverages and sweet or savoury snacks. The physical activity-related aspects included provision of physical education lessons (more than 60 minutes per week) and the availability of recreation areas on school premises. A scoring system was then devised that allows for the calculation of a composite score of relative school nutrition environment.

Jo observed a large variability in school nutrition environments across and within countries. He concluded that some countries appeared to have more supportive school nutrition environments than others, and that lower school nutrition environment scores might relate to the absence or inadequate implementation of national policies. Most countries with low scores also hosted schools with supportive school environment policies. This suggests that uniform school policies to improve the school nutrition environment may not have been developed or implemented to the same degree throughout a country.

The discussions that followed these presentations further enriched the sessions. As regards the aspect of teachers as role models, participants stressed the importance of training teachers to act as such and to communicate with children in an engaging and didactic way. In addition, the question of food- versus nutrient-based standards was raised. Participants referred to data where food-based standards appear to be easier for schools to implement and have been shown to improve the quality of children's nutrition. A hybrid model was discussed where food-based standards are complemented with nutrition standards for particular nutrients (e.g. salt, trans fatty acids or sugars).

On the topic of monitoring and assessing school performance and children's health, it was pointed out that measuring Body Mass Index (BMI) alone can miss important information. In Slovenia, 8% of boys with normal BMI had low muscle mass. Solid evidence linking school meals and educational attainment is still missing and this would be very valuable. Participants noted recent Cochrane reviews that shed some light on this.8,9

^{8.} http://dx.doi.org/10.1002/14651858.CD008958.pub2.

^{9.} http://dx.doi.org/10.1002/14651858.CD009728.pub2.

What next?

The presentations were followed by stimulating breakout sessions where the participants exchanged ideas on 'recipes for success' in the area of school food provision and

how to move forward including monitoring and surveillance. The topics and questions put to the participants are presented here:

Session 1: Evidence of success

- · What's working well? How has school food/school food policy/a particular measure made a difference? Would it work elsewhere?
- What data do you collect to know it's working well?
- · What were the barriers to your success story, if any? How did you overcome them?

- · What are good indicators for successful school food policy implementation and effectiveness?
- · What are the barriers to routinely collecting such data? How can we overcome them?
- How can we harmonise data collection at subnational, national and international level?

Session 3: Monitoring & evaluation

The following tables summarise as extensively as possible the key points raised in response to the questions tabled in the workshop sessions. It should be noted that these points reflect the opinion of one or more

Session 2: Moving forward

- · What can be done better? Which additional measures would you like to see implemented?
- · Why have these measures not been implemented yet? Do you need more evidence? More resources? More time?
- What do policymakers need to move the agenda forward? Who can help?

Session 4: School food and beyond

- · How to better use the school setting for optimal child health?
- · Open space to discuss any other relevant issues (e.g. physical activity, nutrition education, sustainability, teaching the value of food, cooking skills, farm to school, dining facilities, kindergartens)

participants and do not constitute a formal conclusion from the workshop or an official position of the European Commission or any of its services.

Evidence of Success in School Food Policies

Table 2. What's working well?

What's working well?	Additional comments or concrete examples
Collaborations and partnerships	At many levels, <i>e.g.</i> between different governmental sectors or public-private partnerships
Involvement of head teachers	Buy-in from head teachers seen as crucial for success
Local ownership and co-creation (engage children, chefs, teachers, etc.)	 Use bottom up approaches Use social marketing
Monetary incentives	• E.g. subsidies for low fat milk vs full fat milk
Increasing availability of healthy choices and reducing availability of unhealthy choices	School Fruit Scheme/School Milk SchemeGuidance on foods (dis)allowed in vending machines
Having standards	Include budgets and benchmarks
Tailored policies and programmes	 Think about the age of the child not the type of school (e.g. there are big differences between a 6 or a 10 year old but both attend primary school) Think about regional differences Individual targeting important, especially when dealing with disadvantaged groups
Having strong assessment tools	Important to know what does not work in order to learn from previous experience
Willingness to adapt and be flexible	
	SHE factsheet School health promotion: Evidence for effective action (http://www.schools-for-health.eu/ pages-resources/she-factsheets-additional-information/read-more-she-factsheet-2)

 Table 3. How do you know it is working well?

How do you know it is working well?	Additional comments or concrete examples
Evaluation (e.g. cost effectiveness is important)	Crucial step (including baseline measurements)
Monitoring (<i>e.g.</i> school food uptake, public opinion)	 Use both process and proximal indicators (<i>e.g.</i> vegetable consumption) Body Mass Index (BMI) is too prescriptive and too far down the line (NB: school food is estimated to contribute 15% of daily energy)

 Table 4. Barriers to success stories.

Barriers to success stories	Additional comments or concrete examples
Lack of resources or inadequate allocation (e.g. due to lack of long-term view)	Funding, personnel, infrastructureProject sustainability (min 10 years)
Too strict guidelines	May lead to resistance in implementing them
Parents' perception of school food	
Food procurement guidelines and rules	
Lack of effective communication	Learn from social marketing
Austerity measures and economic crisis	Not only lack of resources, but also demotivation
Volatility of government policies	
Lack of evidence (or perceived lack of evidence)	Nutrition community should aim to speak with one voice; agree on priorities and focus on specific actions
Lack of holistic approach	

Moving School Food Policies forward

Table 5. What can be done better?

What can be done better?	Additional comments or concrete examples
Achieve understanding in multi-factorial interventions to have an effect	What (if any) are the minimal elements?
Collect comparable data	 Nutritional indicators, proxy indicators, academic achievement (comparisons over time and across countries); comparability essential
Establish benchmarking tools	 Similar to PISA for academic achievements Could School Nutrition Index of Programme Effectiveness (SNIPE) help?
Implementation needs to happen	Including monitoring (also over long periods)
Have guidelines for (comparable) self-assessment	
Have better (comparable) operational criteria	• E.g. technical specifications for procurement
Have better tools and better (comparable) nutrition criteria	• E.g. nutrient profiling
Make 'health in all policies' a reality	Build an ecosystem of health
Adapt to using new technology	• E.g. online dietary assessment tools linked to food composition databases (UK example)

Table 5. (cont.)

What can be done better?	Additional comments or concrete examples
Restrict vending machines	Note the need to distinguish between vending machine and its content
Invoke corporate social responsibility to ensure schools as a protected space	
Despite the need for a legal basis for action, regulations and guidelines must be flexible	
Shift expenditure towards public health and prevention	Target resources and consider cost effectiveness
Engage and empower communities	• <i>E.g.</i> encourage parents to occasionally come and eat with children at school
In partnerships, understand each other's motives	
Involve and support head teachers more	
Train all actors in the school food chain	
Communicate better	Including more convincing discourse
Share, learn from successes and failures in all areas	 What works and what does not? Make a collection of best practices available to all, and in one and the same place (knowledge hub) Open access publishing
Consult public more in legislation	
Strengthen fiscal measures, marketing restrictions	Introduce legislation about advertising and sponsoring of sports events (invoke corporate social responsibility)
When considering school environments, include immediate neighbourhood	
Revisit portion sizes	Introduce standardised portions
Target resources to those most in need	
Seek detailed feedback	Learn from surveys, analyse results, go back to school (children, teachers) and ask why
Improve school food image	• E.g. through involvement of famous chefs; direct participation of children in school food preparation; establishing canteens where students can make their own food
Importance of canteen environment: visual and acoustic quality	• E.g. fun drawings on the walls
Encourage (older) kids not to leave school during lunch hours	 Proposal to give children a pre-paid card topped up by parents, to be used to buy food at school

Table 6. What do policy-makers need to move the agenda forward?

What do policy-makers need to move the agenda forward? Who can help?	Additional comments or concrete examples
Policy-makers need to be convinced and have solid and convincing arguments to ensure buy-in from population	Examples: protection of the weakest, impact on reducing inequalities, can be economical but also health outcomes, educational attainment, behaviours in school, absenteeism, school meals impact on work force capacity, part-time vs full-time female working population
Economic evaluations	 Quantify benefits of school meals Cost effectiveness
Better knowledge and communication	Need for honest brokers
JRC can help	 Gathering the evidence, facilitating exchange, supporting implementation, evaluation or monitoring of EU actions, methodological support Checking what has already been done, including outside EU
WHO can help	• As above
We (i.e. the workshop participants) can help	Keeping in mind multidisciplinarity, self-initiative and ambitious goals

Monitoring and Evaluation

Table 7. Proposed process and outcome indicators for school food policy implementation and effectiveness.

What are good process (P) or outcome (O) indicators for school food policy implementation and effectiveness, respectively?	Additional comments or concrete examples
School ethos (P)	Measured by accreditation and award schemes
School food policies (P)	
Financial sustainability and stable funding (P)	
Reach of the programme (P)	Number of children, regions, etc.
Satisfaction of the school workforce (P)	
Food service infrastructures (P)	
Customer satisfaction surveys on school food (P)	
Local involvement (P)	• E.g. % of parents involved in school activities
School food standards certification with follow-up audits (P)	

Table 7. (cont.)

What are good process (P) or outcome (O) indicators for school food policy implementation and effectiveness, respectively?	Additional comments or concrete examples
School self-evaluation as an indicator itself (P)	
Prevalence of eating healthily at the time of school age (0)	Measuring nutrition status at the time of leaving school
Absenteeism (0)	
School food uptake (0)	• Effectiveness
School food intake (0)	• Implementation
Educational engagement (0)	
Health Behaviour in School Children (HBSC) data (0)	
Childhood Obesity Surveillance Initiative (COSI) data (0)	 Caveat that body weight and BMI are not one-size-fits-all markers of health Evidence from Slovenia that normal BMI paired with low muscle mass is becoming an issue
Educational attainment (0)	
Well-being (0)	Evidence from Norway where one municipality saw that upon implementation of a programme where all children get a free school meal and started eating together with peers and adults, students reported higher well-being at school
Number of students on diet (0)	
National nutrition surveys (0)	
Dietary quality of food (O)	Including lab analysis
Behaviour in class (0)	
Health behaviours rather than health status (e.g. BMI) (0)	Measures of behaviour and behaviour change
	Indicators must be based on policy objectives

 Table 8. Barriers to routinely collecting data

What are the barriers to routinely collecting data?	How can we overcome them?
Lack of training and awareness, lack of guidance	
Different frameworks, lack of harmonisation, standardisation	 One platform Systems Approach for Better Education Results (SABER), SNIPE, FRESH are examples of different questionnaires As few indicators as possible that are good discriminators (also cover different domains including education, social and agriculture indicators) Establish a set of core harmonised indicators that countries can report on
Non-responsiveness	 Embed school food specific questions into other local, national or international surveys (HBSC, COSI) Give incentives, rewards, acknowledge who responds Ensure that the survey or questionnaire is tailored to the respondent Have a big questionnaire occasionally (e.g. once every 5 years) and a mini questionnaire more regularly
Unclear responsibilities	
Lack of resources	
Reaching from EU to individual schools is a challenge	 Tap into education programmes (EAC, Erasmus, Comenius, Eurydice) Use a network of champions (High Level Group on Nutrition and Physical Activity)
Respondent can be a barrier to quality of information	Needs a protocolAcknowledge and give responsibilityExternal auditing
Lack of data	
Centralisation vs decentralisation of the school system	
Voluntary school food policies make it difficult to collect data	

Table 9. How to harmonise data collection?

How can we harmonise data collection at subnational, national and international level?	Additional comments or concrete examples
Tap into international surveys (HBSC, COSI)	 COSI already provides a platform EC/JRC & WHO should work together to standardise data collection
Use Eurydice, SABER, FRESH, SNIPE	
Build up a resource platform/summer academy	

Beyond School Food

 Table 10. How to better use the school setting for optimal child health

How to better use the school setting for optimal child health?	Additional comments or concrete examples
Integrate nutrition into the wider school agenda	E.g. food safety, food hygiene and sanitation, food citizenship and culture, mental health, well-being
Improve school health services	
Provide trained school governors	• E.g. health prevention coordinators in Slovakia
Build partnership between parents, teachers and children working through trained school governors	
Reaching/educating parents/children	• E.g. provide culture-specific activities, invite parents to eat at school
Use the school environment to reach out to the community, tackle broader community issues and introduce healthy habits	
Introduce zoning around schools	• E.g. no fast food outlets within a defined perimeter (may be hard to achieve or control in city centres)
Introduce a national registry of school health data, encompassing all issues (<i>e.g.</i> underweight)	
Extend school day beyond lunch	 Reduces trade-off between academic learning and physical education Establishment and promotion of school sports clubs (promotion of physical activity)
Make nutrition education part of formal training for head teachers and all teaching staff	Use teachers as role models
Use evidence-based approach to teach how nutrition is linked to the human body and its performance	Important to make connection between theory and practice
Establish school food gardens to educate the kids on the basics of food production processes from start to finish	
Limit screen time and sedentary behaviour	Organise classes that combine physical activity with academic learning

Concluding remarks

Schools can be an effective setting to promote children's health and ensure a healthier generation of adults. The EU Action Plan on Childhood Obesity 2014-2020 (APCO) acknowledges this by dedicating one of its eight areas for action to the promotion of healthier environments, especially in preschools and schools.10 In fact, school nutrition is one of the major policy areas to be developed further through the APCO. This workshop explored how best to build on current knowledge to maximise schools' potential both to educate and to ensure a healthy(ier) student and future population. The choice of experts and the agenda of the workshop were carefully planned so that academic experts and policy-makers would share not only solid scientific evidence but also anecdotal hands-on knowledge regarding school food policy-making, its implementation and effectiveness.

Many points emerged from the presentations and discussions. At the level of policy design, the fact that all EU28 countries currently have a school food policy in place is a commendable development. These policies have many common points but also many unique ones, which makes the EU an interesting experimental setup to test the effectiveness of different school-based measures. Those working in the design or implemen-

tation of such measures highlighted that building partnerships at different levels, ensuring local engagement and co-creation were essential pillars for developing and introducing successful and well-accepted policies. The co-involvement of head teachers was seen as crucial in this regard. Increasing the availability of healthier options coupled with reducing the offer of foods and drinks with less healthy profiles was also suggested as one effective way of achieving an overall healthier food intake among students.11 Capacity building at various levels of the workforce (e.g. teachers, chefs, coordinators and caterers) could also be developed or be embedded into a framework of lifelong learning. Supporting materials and information do exist, but should ideally be made available through a centralised portal or knowledge hub.

Other measures to be considered more broadly are, for example, revisiting portion sizes and agreeing and/or harmonising benchmarking tools for the purpose of obtaining comparable data. Indeed, the monitoring and evaluation of school food policies and their implementation and effects are seen as essential. In this regard, many indicators were discussed, from school food intake and uptake to education attainment or absenteeism. Child BMI is certainly an important

^{10.} http://ec.europa.eu/health/nutrition_physical_activity/docs/ childhoodobesity_actionplan_2014_2020_en.pdf.

^{11.} See our School Food Policy report for examples: http://dx.doi. org/10.2788/82233.

population indicator of overweight and obesity and related health problems – WHO Europe is going to great lengths with its surveys COSI and HBSC to collect such data. Nonetheless, the participants highlighted the need for more proximal indicators (see *Table 3*) as well as indicators that can reveal other forms of malnutrition (*e.g.* vitamin deficiencies or muscle mass loss). As alluded to earlier, research needs to clarify the strength of the link, if any, between the quality and settings of the meals and foods proposed at school and education-related indicators such as attainment, behaviour in class, attention span or absenteeism.

The European Commission together with WHO Regional Office for Europe was seen to have great potential in harmonising data collection, and both organisations were praised for the progress made so far. Existing tools and resources such as SNIPE,12 SABER,13 FRESH,14 and Eurydice15 could be exploited and/or expanded to cover all aspects relevant to the extension and sustainability of healthy food promotion in European schools. The collection and sharing of data was also debated in this context as data protection rules, in particular for children at national and EU level, may present a barrier. This point aside, the need for data and indicators for successful school food policies and their impact remains. Importantly, the same indicators could be a useful tool to

inform potential APCO-related activities, as well as to monitor and evaluate the effectiveness of specific MS actions and the outcome of the action plan itself.

As a final observation, reference should again be made to the little investment made in prevention. Currently, only 3% of all healthcare spending goes into prevention. Increasing this figure by just two percentage points would effectively almost double the outcome produced. Unfortunately since 2009, investment in prevention in OECD countries has been cut.¹⁶ The European Commission is currently co-funding (EUR 1.2 million) a Joint Action with the aim of sharing good practice in nutrition and physical activity policy.

In conclusion, we hope this summary is informative and helps steer progressive discussions between all those directly or indirectly involved in school food policy-making. At EU level, the High Level Group on Nutrition and Physical Activity is the ideal instrument to build on the school food momentum and the potential that the school setting offers for curbing the current growing public health demands facing the EU. The JRC will continue supporting the Member States in this endeayour.

^{12.} http://dx.doi.org/10.2788/82233.

^{13.} http://saber.worldbank.org/index.cfm.

^{14.} http://www.unesco.org/education/efa/know_sharing/flag-ship_initiatives/fresh.shtml.

^{15.} http://eacea.ec.europa.eu/education/eurydice/index_en.php.

^{16.} http://www.oecd.org/els/health-systems/Health-at-a-Glance-2013.pdf.

Author contributions

SSgB contributed to organising and executing the workshop, co-authored the report and handled its editing and publication. SC contributed to organising and executing the workshop and co-authored the report. JB contributed to organising and executing

the workshop and reviewed the report. MN conceived the workshop and contributed to defining the workshop content. JW contributed to defining the workshop content and helped with the workshop execution.

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- · Manuel Florensa-Molist for graphic editing and layout.

Annex I: Workshop participants and their short biographies



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Maria-Mihaela Armanu • Ministry of Health, Romania

Maria-Mihaela Armanu is a medical doctor, specialist in food hygiene and nutrition. She has a MPH at 'Carol Davila' University of Medicine and Pharmacy of Bucharest. She works in the Ministry of Health at Department of Politics and Strategies in Health. Her main responsibilities are nutrition and food safety. She is also the representative of the Ministry of Health at the High Level Group on Nutrition and Physical Activity at the European Commission.



Anastasia Barbouni · National School of Public Health, Greece

Anastasia Barbouni studied Medicine at the University of Athens, Greece. She is Paediatrician and is specialised in Paediatric Intensive Care Unit. She holds a Master of Public Health (MPH) from the National School of Public Health and Doctorate (PhD) from the University of Athens in the field of Epidemiology. Her research interests cover the epidemiology of chronic diseases, nutrition and the development of prevention and intervention programmes and efforts for the control of smoking habit in Greece. Since 2003 she has been a Senior Lecturer at the Department of Public Health of the National School of Public Health, Athens, Greece. She is a member of the National Nutrition Committee and since 2004 is representative of Greece to the Council of Europe (CDSP-Public Health Committee).



Christopher Birt • University of Liverpool, UK

Christopher Birt is a staff member of the Department of Public Health and Policy at University of Liverpool, UK. His interests included cardiovascular epidemiology and prevention, and from this to his interest in public health nutrition. He is President of the European Public Health Association (EUPHA) Section on Food and Nutrition. From 2011 to 2013 he was Vice-President of the European Public Health Alliance (EPHA); from 2008 to 2012, as a member of the Executive Committee of the Association of Schools of Public Health in the European Region (ASPHER), he led the group which developed the European set of public health competences.



João Breda · WHO Regional Office for Europe, Denmark

João Breda is the Programme Manager Nutrition, Physical Activity and Obesity at the NCD and Life-Course Division at WHO Regional Office for Europe. He holds a PhD in Nutritional Sciences from Porto University, a Master Degree in Public Health by the Medical Sciences Faculty of the University Nova de Lisboa, and an MBA from the European University in Barcelona. He was the Portuguese representative in the WHO-Europe for the area of Nutrition and Physical Activity and in the European Union, and also the focal point from Portugal in the European Network on Nutrition and Physical Activity at the High Level Group on Nutrition and Physical Activity and the European Platform on Diet, Nutrition and PA of the EU. Finally he was the first and former Coordinator of the National Platform against Obesity at the Portuguese Ministry of Health and worked as a Public Health Nutritionist in the General Health Directorate of the Ministry of Health.



Myles Bremner • School Food Plan, UK

Myles Bremner became Director of the School Food Plan following its publication in July 2013. His role is to lead the implementation of the sixteen agreed actions in the Plan. His previous role was as Chief Executive of Garden Organic, a leading UK educational horticultural charity. In that role, Myles developed food education programmes for schools and the wider community. He was a Board member for the Food for Life Partnership, Chair of Capital Growth and chaired Defra's Food Growing in Schools Taskforce in 2011. He is a member of the London Food Board.



Janet Cade · University of Leeds, UK

Janet Cade has led the Nutritional Epidemiology Group at the University of Leeds since 1994 and published around 200 papers. Her main areas of research are nutritional epidemiology, relationship of diet to chronic disease development, diet-gene interactions, development of new diet assessment methods. Examples of funding include: development of an on-line 24h dietary recall (MRC); development of a smartphone app to support weight loss and measure calorie intake (NPRI); an RCT to explore ways to get children eating fruit and vegetables. Janet has considerable experience in translating epidemiological research into clear public health advice and also of working with the media. Her FSA-funded project on caffeine consumption during pregnancy has led to new government advice for pregnant women.



Sandra Caldeira • Institute for Health and Consumer Protection (IHCP), JRC

Sandra Caldeira is Project Manager at the European Commission (Joint Research Centre), where she leads an enthusiastic team working on Nutrition and Health. Their research portfolio is focused on policy support to public health and covers present and future nutrition-related issues and their impact on the health of European citizens, from childhood obesity to active and healthy ageing. Sandra holds degrees in Microbiology and Biotechnology as well as a PhD in Biomedical Sciences. She worked as a postdoctoral researcher in the University of Lisbon and at Cambridge University and Stanford University. Prior to joining the European Commission

(in 2010) she held positions as an invited professor of Genetics at the University of Lisbon and as a Scientific Editor at the European Molecular Biology Organisation (EMBO).



Margherita Caroli · Nutrition Unit ASL Brindisi, Italy

Margherita Caroli is the head of the Nutrition Unit at ASL Brindisi. She holds degrees in paediatrics and nutrition and a PhD in Paediatric Nutrition. Her main work is childhood obesity prevention and promotion of healthy life-style in children. She has been the coordinator of many European, national and regional projects dedicated to childhood obesity prevention and the president of The European Childhood Obesity Group. She has been expert for DG SANCO, Research, AGRI, and temporary advisor for WHO. She has published several papers in the field of paediatric nutrition.



Bent Egberg Mikkelsen • Aalborg University, Denmark

Bent Egberg Mikkelsen holds a M.Sc. of Food Science from Royal Agricultural University, Copenhagen and a PhD in Social Science, from Roskilde University. He is the author of a large number of publications on public health nutrition and sustainable public food systems. Bent is principal investigator on several research projects and work includes several assignments for the Council of Europe, Nordic Council of Ministers, European WHO Regional Office and the EU. He is the chair of EU expert committee for the School Fruit Scheme (SFS). Member of advisory boards of ProMeal, VeggieEat projects, Sapere Taste Education network, EU FoodLinks Management committee of COST action IS1210 and vice-president in the Food & Nutrition section of EUPHA.



Marike Eksin • Ministry of Social Affairs, Estonia

Marike Eksin is a Chief Specialist of Non-Communicable Diseases in the Department of Public Health at the Ministry of Social Affairs of Estonia. Her scope of work for the last 1.5 years includes nutrition, cardiovascular diseases, musculo-skeletal diseases, diabetes and cancer. Her earlier background is related to the Primary Health Care as she used to work as a Family Nurse. In 2003, Marike acquired her Bachelor's degree in Nursing at Tallinn Medical College. In 2011, she graduated as a Master in Social Sciences, specialising in Health Promotion at Tallinn University.



Charlotte Evans • *University of Leeds, UK*

Charlotte Evans is a Lecturer in Nutritional Epidemiology and Public Health Nutrition at the University of Leeds, with a special interest in child and adolescent health. She has publications on factors affecting dietary quality in children's diets such as school meal type, fruit and vegetable consumption and micronutrient intake as well as evaluations of interventions and systematic reviews. Charlotte is on the editorial board for the British Journal of Nutrition and has spoken at many conferences across the UK, Ireland, mainland Europe and the US. She has featured on television, radio and in newspaper articles as a nutritional expert.



Meena Fernandes • World Food Programme (WFP), Italy

Meena Fernandes is a policy consultant at the World Food Programme. As demonstrated by her numerous publications in peer-reviewed journals, she is a researcher who specializes in food policy and childhood obesity with a focus on school meals. Prior to her current position she conducted evaluations of US food policy initiatives in the United States, and was an analyst at the RAND Corporation and the World Bank. She has a degree in Economics and a PhD in Policy Analysis.



Mojca Gabrijelčič Blenkuš • National Institute of Public Health, Slovenia

Mojca Gabrijelčič Blenkuš is a medical doctor, specialist of public health. Her special interest is in health promotion, in the areas of nutrition, physical activity, children and adolescent, healthy and active ageing, using health in all policies approach and considering health inequalities. In those areas she has been mostly involved in policies and programmes development and research projects. Since year 2000 she is WHO national counterpart for nutrition and she is actively involved in the work of the WHO action networks on nutrition. At the EU level she participates in the work of the High Level Group on Nutrition and Physical Activity and she is the member of the Eurohealthnet Board. She's a lecturer at the Medical faculty, University of Ljubljana.



Christine Gelbmann • Austrian Agency for Health & Food Safety (AGES), Austria Christine Gelbmann is a nutritionist with focus on public health nutrition. She finished her degree in Nutritional Sciences at the University of Vienna and worked for several public health programs in various settings (communal, school, social). Currently she is involved in the Austrian school food initiative 'Unser Schulbuffet' ('Our school cafeteria') of the Austrian Federal Ministry of Health, which is operated by the Center for Nutrition & Prevention of the AGES.



Pedro Graça · Directorate-General of Health (DGS), Portugal

Pedro Graça is Director of the National Programme for the Promotion of Healthy Eating and Chief of Division responsible for Health and Schools Programmes (Saúde Escolar) at Portuguese Ministry of Health. He holds a degree in Nutrition and a PhD in Public Health and Nutrition. He is also professor at Oporto University and Portuguese focal point at WHO Europe and DG SANCO-High Level Group on Nutrition and Physical Activity.



leva Gudanaviciene • Ministry of Health, Lithuania

Ieva Gudanaviciene is a public health specialist (magister degree). One of her working areas is healthy nutrition policy (preschools, schools, foster home). She is in the area over five years. Other areas of responsibility are breastfeeding, healthy ageing. Prior to her current position she worked as a specialist at the National Nutrition Centre of Lithuania. There her responsibilities were risk assessment of food contaminants and pesticide residues and national legal acts fixing maximum levels for contaminants and pesticide residues in foodstuffs.



Jan Jansen · Dutch Institute for Healthcare Improvement CBO, The Netherlands

Jan Jansen has a university degree in Nutrition and Health Sciences and is Master in Public Health. After a few years of nutrition-research at TNO, he started working at the National Institute for Public Health, working on the prevention of Cardiovascular Disease (Dutch Focal Point for the WHO). He contributed to the Public Health Status and Forecasts. From 2002 to 2012 he worked at the National Institute for Health Promotion and Disease Prevention NIGZ. Main topics were socio-economic differences in health, community development, and Health Promoting Schools. At CBO he is involved in several international projects in these fields. He is member of the board of the Association for Public Health and Science in The Netherlands.



Jo Jewell • WHO Regional Office for Europe, Denmark

Jo Jewell is a consultant in nutrition and obesity policy for the Division of Non-Communicable Diseases and Life Course at the WHO Regional Office for Europe. He is currently providing technical support to the Division for the development of the new European Action Plan on Food and Nutrition. Previously he worked as Policy and Public Affairs Manager at World Cancer Research Fund International and at the European Public Health Alliance in Brussels, where he was policy lead for health promotion and disease prevention. He has a background in European politics, and completed his MSc in Health Policy, Planning and Financing at the London School of Economics and the London School of Hygiene and Tropical Medicine.



Sanita Kukliča • Ministry of Health, Latvia

Sanita Kukliča is a Senior Expert in Health Promotion at the Ministry of Health of Latvia in the Department of Public Health for four years. She holds a Professional Bachelor's Degree in Political Science and an Academic Master's Degree in Public Health. She is involved in the process of national policy development in public health and health promotion (including nutrition) and she is responsible for the drafting of normative nutrition regulations. She also works with intersectoral policy issues in cooperation with other state authorities like food safety, education, sports and also has experience in organizing different health promotion activities (informative materials, public awareness campaigns etc.).



Anastasia Livaniou • Institute for Health and Consumer Protection (IHCP), JRC Anastasia Livaniou is a nutritionist-dietitian and holds a MSc in Clinical and Public Health Nutrition from UCL. She is currently working as a trainee in the JRC's Nutrition and Health team, mainly focusing on projects related to trans fatty acids in EU diets, food legislative framework in Europe and the implications of food waste. She has one year of clinical experience and worked two years as a Dietitian and Diabetes Educator for Roche Diagnostics S.A. Before joining the IHCP, she worked as contract researcher at Harokopio University Athens, Greece, participating in large pan-European projects focusing on childhood obesity prevention.



Sven Majerus • Ministry of Health, Luxembourg

Sven Majerus is responsible for the coordination of the national health promotion plan 'Nutrition and Physical Activity' of Luxembourg. He holds a Master in Public Health Sciences and is PhD-Student in Medical Sciences at the University of Liège (Belgium). He is a member of the High Level Group on Nutrition and Physical Activity (DG SANCO). His field of research focuses on the socioeconomic disparities in obesity.



Barrie Margetts · University of Southampton, UK

Professor of Public Health Nutrition, University of Southampton and President World Public Health Nutrition Association; retiring from both posts later in 2014. Current research covers the impact of the nutrition transition in South Africa, food based intervention in Mumbai slums to promote pre-pregnancy health; evaluation of obesity services in Southampton; web-based interventions for obesity control in primary care, and building workforce capacity in a number of different countries and settings. Recent consultancies: WHO review of Nutrition Policies and Review of nutrition in primary health care in Europe; currently acting as consultant for UNICEF Facts for Life chapter on Healthy Living and the prevention and control of NCDs.



Éva Martos • National Institute for Food and Nutrition Science (NIFNS), Hungary Éva Martos, MD, PhD is the general-director of NIFNS since 2005. She started her career in the National Institute of Sport Medicine first as a research physician and later as a deputy director. She defended her PhD thesis in 1994 entitled 'The role of regular physical activity in the prevention of cardiovascular diseases' and gained habilitation in 2000. She is a specialist in sport medicine, clinical laboratory medicine and health insurance medicine. She is the WHO Nutrition Counterpart of Hungary and also the member of the DG SANCO HLG on Diet and Physical Activity.



Brie McMahon • Partnership for Child Development, Imperial College London, UK Brie McMahon joined the Partnership for Child Development (PCD) based at Imperial College London in 2011 with over eight years of experience in facilitating multisectoral partnerships. Since joining PCD, Brie's major focus has been on developing, maintaining and building the global, regional and national partnerships across education, health and agriculture needed for effective implementation of locally sourced school feeding programmes in low and middle income countries. Brie holds a Master's Degree in Adult Education in Community Development and has extensive international experience, working across Africa, South East Asia and North America.



Neliya Mikushinska • Ministry of Health, Bulgaria

Neliya Mikushinska is Head of Department Public Health Protection, Public Health Directorate in the Ministry of Health of Bulgaria. She is a medical doctor and after finishing Medical University, she specialised in 'Nutrition and Dietetics' in the Medical Academy, Sofia. As Head of Department, her main responsibilities are in policy-making, drafting legislation (Laws, ordinances, guidelines and instructions), participation in national and international projects on Public Health issues, including Nutrition and Food safety. She is national representative in the High Level Group on Nutrition and Physical Activity, Standing Committee on Food Chain and Animal Health to the European Commission and working party on Emerging risks of EFSA.



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Theodora Mouratidou is a scientific/technical project officer at the JRC-IHCP focusing on policy support in the field of Nutrition and Public Health. She holds a degree in Human Nutrition and in 2007 obtained her PhD from the University of Sheffield on dietary assessment of pregnant women. Since then she held positions as a post-doctoral researcher at the University of Sheffield and at the University of Zaragoza, Spain, where she worked in several obesity related projects such as the FP7-funded HELENA, IDEFICS and ToyBox.



Flaminia Mussio • Institute for Health and Consumer Protection (IHCP), JRC

Flaminia Mussio graduated from the University of Surrey in Nutrition and obtained her MSc in Nutrition, Physical Activity and Public Health from the University of Bristol. She is currently working as a trainee in the Nutrition and Health team, within the Public Health Policy Support unit, Institute for Health and Consumer Protection, where she is working on the impact of school-based interventions on the dietary and physical activity behaviours of European children. Her interests include nutritional epidemiology and childhood obesity.



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Ursula O'Dwyer • Department of Health and Children, Ireland

University (Germany, 1992-1995).

As National Health Promotion Policy Advisor, Ursula O'Dwyer plays a key role in prioritising health promotion, obesity and nutrition policy objectives for action and monitoring their delivery. This applies to general population health policy recommendations and also chronic diseases where nutrition and lifestyle play a key role such as obesity, cardiovascular disease and diabetes. Ursula's principal duties are: 1) to provide assistance and advice to the Department on obesity, nutrition, physical activity and health promotion generally; 2) to develop health promotion policy in relation to NCDs (obesity, cardiovascular disease, nutrition-related cancers, diabetes, dental disease and osteoporosis); 3) to implement relevant policy actions and assist in developing aspects of future health promotion, nutrition and obesity policy; 4) to advise the Department of international research and evidence of best practice in relation to health promotion, nutrition and obesity; 5) to represent the Department on national and international nutrition, obesity and health promotion expert and policy groups.



Emma Patterson • Stockholm County Council/Karolinska Institutet, Sweden Emma Patterson is the project manager for SkolmatSverige.se (School Food Sweden), a national web-based system that helps schools evaluate the quality of their meal provision in multiple domains. Emma has a degree in Human Nutrition and Dietetics from Ireland, a PhD in medical sciences from Sweden and has completed postdoc periods in nutritional epidemiology and public health. SkolmatSverige currently covers almost one third of all primary schools in Sweden and is used for



Ivana Pavic Simetin • Institute of Public Health, Croatia

evaluation and monitoring of school meal quality.

Ivana Pavic Simetin is assistant director for quality in Croatian Institute of Public Health. She is medical doctor, specialist in school and adolescence health. She holds a PhD in Biomedical Sciences. She has been working at Croatian Institute of Public Health since 2000 at Youth Health and Drug Prevention Department. Her predominant scientific and professional interest is aimed to pupils' and youth health and well-being.

Astrid Potz • Federal Ministry of Food and Agriculture, Germany

Dr. Astrid Potz, Senior officer, degree in Nutrition Sciences and Economics; started as a research assistant at the department of biochemistry and animal husbandry at the University of Bonn; then changed to the Federal Ministry of Health, focus on research and international relations, since 2001 in the Department of Nutrition, Research and nutrition policy at the Federal Ministry of Food and Agriculture and a. o. involved in the development of the Quality Standards for school meals by the German Nutrition Society. Member of the High Level Group on Nutrition and Physical Activity since 2008.



Anna-Karin Quetel · National Food Agency, Sweden

Anna-Karin Quetel is a co-worker at the national Centre of competence for meals in healthcare, schools and social services in Sweden. She holds a master's degree in nutrition and works mainly with tasks regarding meals in the educational sector. During 2013, Anna-Karin was responsible for developing the agency's revised guidelines Good School Meals and organized a training campaign for school catering staff. The national Food Agency works for healthy dietary habits, safe foods and fair practices in the food trade in Sweden.



Jorunn Sofie Randby • Directorate of Health, Norway

Jorunn Sofie Randby has since 2011 worked as advisor in the Public Health Division of the Norwegian Directorate of Health. She currently works in the Department of Childhood and Ageing, where she works on nutrition in childhood settings. She holds an MSc in Public Health Nutrition and another MSc in Food Policy. Prior to working at the Directorate, she worked for three years as technical officer in the Department of Chronic Diseases and Health Promotion at the World Health Organization, particularly on food marketing to children.



Natalie Rangelov • Aalborg University, Denmark

Natalie Rangelov is a Doctoral Student, Research and Teaching Assistant in the BeCHANGE Research Group, Institute for Public Communication, Università della Svizzera italiana (USI). Natalie holds a MA in Public Management and Policy from the Swiss Graduate School of Public Administration (IDHEAP), in collaboration with the University of Lausanne (UNIL) and USI. In addition to working on various projects of the BeCHANGE group, Natalie is project manager for the FAN social marketing project, aimed at promoting healthy nutrition and regular physical activity through tailored communication (technologies) in Ticino, Switzerland. Her research focuses on public communication and innovative approaches to health behaviour change and support.



action plans on drugs.

Philippe Roux • DG Health and Consumers, European Commission Philippe Roux is Head of Unit SANCO.C.4 'Health determinants'. He studied social sciences, European law and Public Health. Prior to his current position he worked at the European Monitoring Centre for Drugs and Drug Addiction where he contributed to the development of the framework and tools for the evaluation of the EU



Sirpa Heljä Sarlio-Lähteenkorva · Adjunct Professor Nutrition, Finland

Sirpa Sarlio-Lähteenkorva works as a Ministerial Adviser and Deputy Director of the Health Promotion Unit at the Ministry of Social Affairs and Health in Finland. She is responsible for nutrition policy issues and works also with other health promotion activities. She has been a member of the Finnish Nutrition Council since 2007. Previously she worked at the Finnish Food Safety Authority (Evira), and as a researcher and acting Professor in Medical Sociology at University of Helsinki.



Samrat Singh · Partnership for Child Development, Imperial College London, UK

Samrat Singh is a research associate in food and agriculture policy at Imperial College London. He holds degrees in social sciences, law and development studies. His current work is primarily focussed on national food reserve agencies in SSA and includes research and technical assistance. Prior to this he provided consulting services in the area of local governance and public service delivery and practiced law in the Supreme Court of India.



Miroslava Slavikova • Public Health Authority, Czech Republic

Miroslava Slavikova studied Nutrition at the Faculty of Medicine and is now finishing her postgraduate study which deals with malnutrition of the elderly population. Her daily agenda includes, in particular, school food, which is well-worked out in the Czech Republic, in that every school has its own school canteen. She follows the food safety and the nutritional level of school food. She holds regular lectures for the management of school canteens and school directors on nourishment as well as issues related to drinks and food dispensers.



Jelena Sreckovic • United Nations World Food Programme (WFP), Italy Jelena Sreckovic joined WFP in April 2010 as a focal point for analytical tools related to school feeding. She graduated in economics and holds a master degree in International Policies and Crisis Management. Before coming to WFP she worked in the private sector as financial analyst. Her main area of work is related to a design of cost-effective and affordable WFP and National School Feeding Programmes.



Stefan Storcksdieck genannt Bonsmann • Institute for Health and Consumer Protection (IHCP), JRC

In May 2013, Stefan Storcksdieck joined the Nutrition team within the Public Health Policy Support Unit as Scientific Project Officer. Stefan holds an MSc equivalent in Nutrition and Household Economics from Justus-Liebig-University Giessen, Germany, and a PhD in Human Nutrition from ETH Zurich, Switzerland. From 2008 to 2013, he was employed first as Nutrition Communications Manager and then as Nutrition & Health Projects Manager at the European Food Information Council (EUFIC) in Brussels. At the JRC, Stefan is focussing on school food standards across Europe, coordinating the JRC input to the EU project PATHWAY-27, and supporting other projects of the Nutrition group.



L. Suzanne Suggs • *Università della Svizzera italiana (USI), Switzerland* Suzanne Suggs is an Assistant Professor of Social Marketing and Head of the Be-CHANGE Research Group in the Institute for Public Communication, Faculty of Communication Sciences, at the Università della Svizzera italiana, Lugano Switzerland. She is also Director of the USI Sustainability Incubator (USI-SINC). She earned a BBA in Marketing from the University of North Texas (USA), a MSc and a PhD in Health Studies from Texas Woman's University (USA), and a Post-doctoral fellowship in healthy ageing and clinical decision-making at McMaster University (Canada). Suzanne's research focuses on health behaviour change communication and ICT.



Silvia Tokárová · Ministry of Education of the Slovak Republic

Silvia Tokárová is a counsellor in the area of healthy lifestyle and the School Meal Program for Slovakia at the Ministry of Education. She coordinates work for 4000 school canteens and 2500 nurseries, elementary and secondary schools. She holds a degree in Economy from the University of Bratislava. Prior the current position she worked as: i) manager for School Meal Program as a pilot project for Slovakia in the GOURMET company in Austria and Slovakia, and ii) project coordinator for 200 school canteens in the area of children nutrition and healthy lifestyle.



Carmen Villar • Spanish Food Safety and Nutrition Agency (AESAN), Ministry of Health and Social Policy and Equality

Carmen Villar works since 2007 in the NAOS Strategy (Strategy for Nutrition, Physical Exercise and Obesity Prevention) at the Spanish Food Safety and Nutrition Agency, under the Ministry of Health, Social Policy and Equality. She has a Degree in Veterinary Science from the University Complutense of Madrid (Spain) and a Master's Degree in Public Health from the Autonomous University of Madrid. Previously, she worked in different positions related to Public Health. At her current position as senior technician, she is involved in different projects aimed at the population, especially young people and children, to adopt better lifestyles, mainly through a healthier diet and the regular practice of exercise.



Jan Wollgast • Institute for Health and Consumer Protection (IHCP), JRC Jan Wollgast graduated in nutrition and household economics from Justus Liebig University, Giessen, Germany in 1998. He subsequently carried out research on the health effects of polyphenols in chocolate and concluded this project by obtaining his PhD at Giessen University in 2005. Since 2002 he has been working as a scientific officer in the JRC's Institute for Environment and Sustainability (until 2009) and Institute for Health and Consumer Protection, where he is currently working in the area of nutrition and health providing scientific and technical support to EU policymakers in the field.

Annex II: Workshop agenda

Thursday	15 May 2014	Speakers		
9:00-9:45	Welcome, aims of meeting, and introductions Ciarán Nicholl (Head of I Policy Support Unit, Ji João Breda (WHO Europ Sandra Caldeira (JRC)			
	Chair: Bent Egberg Mikkelsen			
9:45-10:15	Keynote : Why should we promote a healthy diet for children?	Margherita Caroli		
10:15-11:00	 Evidence session 1: State of the art WHO Europe actions to support better nutrition in schools UNICEF Facts for Life EU actions to support better nutrition in schools including European Action Plan on Childhood Obesity Policy environment for school feeding 	João Breda Barrie Margetts Philippe Roux Samrat Singh		
11:00-11:20	Discussion	All		
11:20-11:40	Refreshment break			
11:40-12:15	Evidence session 2: Developments in school food policy and evaluation Mapping EU school food policies (JRC/SANCO) Focus on food security/reducing micronutrient deficiency through school nutrition England and the School Food Plan	Stefan Storcksdieck genannt Bonsmann Pedro Graça Myles Bremner		
12:15-12:35	Discussion	All		
12:35-14:00	Lunch			
14:00-14:45	 Workshop 1: Evidence of success What's working well? How has school food/school food policy/a particular measure made a difference? Would it work elsewhere? How do you know it's working well? What data do you collect? What were the barriers to your success story, if any? How did you overcome them (incl. punchy messages/elevator pitch)? 	Discussion groups		
14:45-14:55	Preparing group summaries WS1	Rapporteurs		
14:55-15:25	Workshop 1 feedback and discussion	Moderator and rapporteurs		

Thursday	15 May 2014	Speakers
15:25-16:10	 Workshop 2: Moving forward What can be done better? Which additional measures would you like to see implemented? Why have these measures not been implemented yet? Do we need more evidence? More money? More time? What do policymakers need to move the agenda forward? Who can help? 	Discussion groups
16:10-16:20	Preparing group summaries WS2	Rapporteurs
16:20-16:40	Refreshment break	
16:40-17:10	Workshop 2 feedback and discussion	Moderator and rapporteurs
17:10-17:35	Special topic : Schools for Health in Europe-learnings from the field	Jan Jansen
17:35-17:45	Wrap up	
17:45	End of Day 1	
19:30-22:00	Social dinner	

Friday	16 May 2014	Speakers
	Chair: Barrie Margetts	
9:00-9:15	Summary of Day 1	Bent Egberg Mikkelsen
9:15-9:50	 Evidence session 3: Monitoring and surveillance WHO Childhood Obesity Surveillance Initiative (COSI) New WHO data on school environments 	João Breda Jo Jewell
9:50-10:10	Discussion	All
10:10-10:55	 Workshop 3: Monitoring and evaluation What are good indicators for successful school food policy implementation and effectiveness? What are the barriers to routinely collecting such data? How can we overcome them? How can we harmonise data collection at subnational, national and international level? 	Discussion groups
10:55-11:05	Preparing group summaries WS3	Rapporteurs
11:05-11:35	Refreshment break	
11:35-12:05	Workshop 3 feedback and discussion	Moderator and rapporteurs
12:05-13:30	Lunch	

Friday	16 May 2014	Speakers
13:30-14:15	 Workshop 4: School food and beyond How to better use the school setting for optimal child health? Open space to discuss any other relevant issues (e.g. physical activity, nutrition education, sustainability, teaching the value of food, cooking skills, farm to school, dining facilities, kindergartens) 	Discussion groups
14:15-14:25	Preparing group summaries WS4	Rapporteurs
14:25-14:55	Workshop 4 feedback and discussion	Moderator and rapporteurs
14:55-15:15	Refreshment break	
15:15-16:00	Closing session - Summary and discussion	All

16:00 Close

Annex III: Participant feedback

Event's preparation	Below expectations	Met expectations	Above expectations	N/A	N
Programme	0%	72%	28%	0%	18
Objectives	0%	67%	28%	6%	18
Selection of speakers	0%	65%	35%	0%	17
Event's delivery	Below expectations	Met expectations	Above expectations	N/A	N
Contents, quality of presentations	0%	56%	44%	0%	18
Discussion time/interaction between participants	11%	39%	50%	0%	18
Workshops/sub-sessions	6%	67%	28%	0%	18
Balance between sessions	0%	76%	24%	0%	17
Speakers performance	0%	56%	44%	0%	16
Supporting material	0%	78%	22%	0%	18
Provision of additional resources (useful links, downloads, contacts)	6%	56%	33%	6%	18
Organisation and Logistics	Below expectations	Met expectations	Above expectations	N/A	N
Organisation, location, communication with the participants, side events	0%	28%	72%	0%	18
General Comments	Below expectations	Met expectations	Above expectations	N/A	N
Overall evaluation of the event	0%	28%	72%	0%	18

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Abstract

Childhood obesity is on the rise in Europe. Schools are considered a protected environment where children should learn healthy diet and lifestyle habits early on. To this end, Member States have developed policies to guide school food provision among other important aspects. At a JRC workshop entitled 'School Food and Nutrition in Europe: policies, interventions and their impact', participants from national ministries, academia, and non-governmental organisations reviewed and discussed the current state of European school food policy, assessed knowledge gaps and suggested promising ways forward. During stimulating discussions the participants exchanged ideas on recipes for success in the area of school food provision and how to move forward including monitoring and surveillance. Concrete examples in terms of recipes for success were: (1) the building of partnerships, (2) local engagement and co-creation (the co-involvement of head teachers was seen as crucial) and (3) increasing the availability of healthier options. Support from international organisations includes the EU School Fruit and Milk Schemes, the World Health Organization (WHO) Childhood Obesity Surveillance Initiative (COSI) and the Health Behaviour in School-aged Children (HBSC) survey, the United Nations International Children's Fund (UNICEF) Facts for Life programme, and the pooling of information resources and tools for health promoting schools by the Schools for Health in Europe (SHE) network. Moving forward, the participants highlighted various measures at many different levels from revisiting portion sizes to having benchmarking tools and comparable data. Monitoring and evaluation of school food policies and their implementation and effects are seen as essential and appropriate indicators were discussed.

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